25X1

XEROX COPY

for c

WEPTASK/PROBLEM ASSIGNMENT
NAVWEPS FORM 3930/1 (REV. 12-61)

Naval Air Systems Command
DEPARTMENT OF THE NAVY
WASHINGTON, D.C. 20360

See latest issue of BUWEPSINST 3900.4 for details on completing this form.

PRELIMINARY WKG

~~SECRET~~ UNCLASSIFIED
CLASSIFICATION
SECRET
LIMITED DISTRIBUTION

PAGE 1 OF 4

ADDRESSEE	WEPTASK NO.	AMEND. NO.
Commanding Officer Naval Ordnance Test Station China Lake, California 93557	PROBLEM ASSIGNMENT NO.	AMEND. NO.
	EFFORT LEVEL: Maximum	
COGNIZANT ENGINEER: (202) OX 6-3146 Webster K. Whiting	CODE: AIR-53363A	CLASSIFICATION OF WT/PA: TOP SECRET

1. The AIRTASK described below is assigned in accordance with the indicated effort level and schedule. Funding authorization for AIRTASKS will be provided in separate correspondence. If this AIRTASK cannot be accomplished as assigned, advise Commander, Naval Air Systems Command, within ten days.

2. Cancellation, References and/or Enclosures: This AIRTASK does not cancel or supercede any existing AIRTASK or Problem Assignment.

Ref: (a) Agreements on IR Measurement Program dated at NOTS 26 May 1966

3. Technical Instructions:

a. Title: Infrared Measurements Program (U)

b. Purpose: Provide instrumentation and test facilities to obtain quantitative (absolute values, as opposed to relative values) air-to-air measurements of infrared characteristics and signatures of aircraft and/or missiles from sea level to 80,000 feet altitudes.

c. Background Information: The Naval Ordnance Test Station, China Lake, California has, over a period of ten years, been making infrared measurements in the ground-to-ground, ground-to-air and air-to-air environment. Semi-automatic reading of tracking film, to evaluate gun and missile miss-distances only has been performed at the Naval Ordnance Laboratory, Corona, California, at an estimated cost of $0.50 per frame of 35mm/70mm film. Manual reading of 16mm infrared tracking and radiometric film has been required at NOTS China Lake to determine range, target aspect, signal amplitude, etc. Range from the test site to the target aircraft has only been available from (a) photo theodolite triangulation data or (b) scaling aircraft silhouette on photograph to determine wing span for various aspects of simulated attack. Data reduction has then been performed by an expensive, time consuming, non-automated approach. This technique has not provided quantitative position information concerning the target in relation to the fixed, mobile, or airborne test site. Final data has had a low confidence factor because of a lack of repeatability and redundant measurement capability.

Infrared radiometric instrumentation can be improved by (a) reduction in spectral discrimination, (b) adequate calibration techniques and (c) greater ability to separate target aircraft/missile from background.

SIGNATURE (By direction of the Chief)	DATE	CLASSIFICATION
		~~SECRET~~ - LIMITED DISTRIBUTION

d. Detailed Requirements: Beginning on 1 July 1966, this maximum level of effort AIRTASK is assigned Priority No. 1, within the effort of NOTS Code 3008, and will be appropriately supported by NAVAIRSYSCOM and COMNOTS to accomplish the development and test operations as defined in reference (a). NOTS Code 3008 will provide, to assist NAVAIRSYSCOM (AIR-53363A), a quarterly planning schedule of normal NOTS program effort to indicate possible interferences or schedule delays to be resolved.

(1) Provide improved IR measurement capability to obtain quantitative measurements in absolute values referenced to a traceable standard.

(2) Provide improved data readout and reduction processes to reduce man-hours of skilled labor involved and provide repeatable, consistent values.

(3) Provide a four-month study of an improved infrared measurement program considering the following:

(a) New techniques available

(b) Applications of improved equipment and technology

(c) Aircraft installation compatibility requirements

(4) Design and develop IR instrumentation and data reduction equipment and techniques for:

(a) Interim test aircraft configurations

(b) Final test aircraft installation

(5) Provide an integrated final design for selected test aircraft.

(6) Flight test program demonstrations

4. Schedule:

a. Completion Dates:

2.d.(1) and (2) - 1 August 1966

2.d.(3) - 1 November 1966

2.d.(4)(a) - 1 July 1967

2.d.(4)(b) - 1 January 1968

2.d.(5) - 1 March 1968

2.d.(6) - 1 July 1967 and 1 March 1968

b. Quarterly Progress Reports will be due in NAVAIRSYSCOM (AIR-53363A) within ten days of the close of the fiscal quarters. Quarterly Progress Report No. 1 will be due prior to 10 September 1966. Study Synopsis will be due in NAVAIRSYSCOM (AIR-53363A) prior to 10 November 1966.

c. Program Review: Quarterly program reviews will be provided to NAVAIRSYSCOM (AIR-53363A) at NOTS during the last fifteen days of the quarter beginning approximately 15 July 1966. Program reviews will provide demonstrations and exhibits of IR measurements, calibration and data reduction hardware/software.

5. Reports and Documentation:

a. Prepare four copies of progress letters, quarterly reports, study synopsis and a final report of the infrared measurement facility and capabilities. Quarterly reports shall contain cumulative resources (dollars and man-hours) expended. Deliver all four copies of letters, reports and synopsis to the Naval Air Systems Command, attention: Electronic Warfare Branch, Code AIR-53363A.

b. Prepare original and only copies of specific aircraft/missile target characteristics and signature reports, as may be requested, to NAVAIRSYSCOM (AIR-53363A), in accordance with reference (a) and appropriate security requirements.

c. Furnish two copies of all contract documents and technical data provided by this AIRTASK to NAVAIRSYSCOM (AIR-53363A).

6. Contract[illegible]: Contracts to perform portions of this AIRTASK, Purchase Orders for equ[illegible]and/or components exceeding $25K require prior approval of NAVAIRSYSCOM (AIR-53363A).

7. Source and Disposition of Equipment: Equipment for IR measurement and data reduction may be either fabricated or purchased within the limits of the funding of this AIRTASK and the requirements of Item 6 of this AIRTASK. After flight test evaluation the IR measurement facilities will remain at NOTS for follow-on programs. All equipment developed under funds of this AIRTASK shall be identifiable (but not deliverable) to NAVAIRSYSCOM (AIR-53363A).

8. Aircraft Requirements: Transient test aircraft will be serviced and maintained at the Naval Air Facility only as appropriate to transient aircraft. Target and test aircraft selections will be made in consonance with the requirements of NAVAIRSYSCOM (AIR-53363A) and NOTS (3008).

9. Cost Estimates: This AIRTASK represents a finite portion of a continuing IR measurement program for which $600K will be provided for an 18 to 20 month effort. Additional FY 67 funding of $400K to provide final hardware may become available, depending on program progress and funds authorized.

Copy to:
Addressee (3)
NAFI (Code 1000)
AIR-53363A (3)